sends apophyses into it. The contact between the two is distinctly marked, and although a careful microscopical examination has not as yet been made, it does not appear to be a metamorphic contact due to stretching, but an igneous contact, the Stamford gneiss having covered, when in a melted condition, the green gneiss. The Stamford gneiss is apparently a granite which has had the gneissic character impressed upon it.

The general occurrence, composition and structure of the Stamford gneiss corresponds very closely with the Rapakiwi granite of Finnland, described by J. J. Sederholm in Tschermak's Mineralogische und Petrographische Mittheilungen, Band XII., pages 1–31, 1891. Ueber die Finnländischen Rapakiwigesteine.

DECEMBER 10, 1895.

Preliminary Notes on the North Jersey Coast. J. Edmund Woodman.

Three important causes of change are now in operation here—submergence, recession and advance. The first is widespread, but immeasurable. The evidence relevant to this is varied, but chiefly the presence of stumps in salt and brackish water. Deepening of inlets affords no criterion.

Recession is effected by (1) waves, and (2) currents. On Sandy Hook and south of Manasquan inlet this is replaced by advance or grade; hence these are nodal points. This recession is measurable, and may be prophesied approximately for any specified time within certain limits. It can be temporarily prevented at isolated points, although not by present methods, but its ultimate conquest is sure.

The waves act (1) by eroding the shore; (2) by damming inlets, and (3) by transporting material off shore to form bars. Erosion is irregular, and in places erosion and advance alternate and partially compensate. Cutting is greatest with a northeast wind—*i. e.*, when wind and current are in opposition; it is least with a southeast wind. This is contrary to general theory, but is readily explainable. The damming of inlets is caused partly by coastwise bars raised by the waves and partly by sediment from the streams falling in the dead water where current and waves meet. Probably the former cause does not operate until some sedimentation has taken place. Most of the sand eroded from the shore is carried a few hundred feet out to form bars, little migrating along the margin of the land.

The currents act (1) by carrying a small amount of sand along shore as mentioned; (2) by the migration of bars northward—the most important method of transportation, and, as a result, (3) by deposition of most or all the sand on Sandy Hook.

T. A. Jaggar, Jr.,
Recording Secretary.

THE ACADEMY OF SCIENCE OF ST. LOUIS.

At the meeting of January 6, 1896, President Green in the chair and eighteen other members present, the officers placed in nomination at the last meeting were declared as elected for the year 1896.

The reports for 1895 of the Treasurer and Librarian were read and accepted.

Prof. Engler pointed out a simple graphical method of drawing a normal to a parabola from a point outside the curve.

On motion of Prof. Pritchett, the Council was requested to arrange for a meeting of the Academy, in the near future, commemorative of the service of four distinguished men who had died in the past year: Dana, Helmholtz, Huxley and Pasteur.

Mr. Espenschied exhibited several samples of sisal and palm-fibre utensils obtained from the Bermudas and West Indies, explaining the mode of preparation.

Two new resident members were elected.

Wm. Trelease,
Recording Secretary.

NEW BOOKS.

Movement. E. J. Marey. New York, D. Appleton & Co. 1895. Pp. xv + 318. $1.75.

Computation Rules and Logarithms. Silas W. Holman. New York and London, Macmillan & Co. 1896. Pp. xlv + 73. $1.00.

Plant Breeding. L. H. Bailey. New York and London, Macmillan & Co. 1895. Pp. vii + 293. $1.00.

The Chemistry of Pottery. Karl Langenbeck. Chemical Publishing Co., Easton, Pa. Pp. vi + 197.